

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/32296

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : H04N 7/12

US CL : 375/240.15, 240.2, 240.25, 240.27, 240.28, 240.29; 348/453, 515, 596, 729; 704/500; 380/239

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 375/240.15, 240.2, 240.25-240.29; 348/453, 515, 596, 729; 704/500; 380/239

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EAST

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2003/0079222 A1 (BOYKIN et al) 24 April 2003, figs. 9, 43 & 48, para. 0035, 0134-0143, 0140, 0174-0179, 0180, 0195.	1-3, 28-33
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Y		
X	US 6,341,144 B1 (HASKELL et al) 22 January 2002, fig. 4, col. 6, lines 10-27.	7
X,P	US 2004/0032969 A1 (KAZUI et al) 19 February 2004, para 0047.	8
Y	US 2003/0095603 A1 (LAN et al), 22 May 2003, fig. 4, para 0029.	9
X, P	US 2004/0263361 A1 (PEARSON et al) 30 December 2004, para. 0039-0042.	10-11
X	US 5,940,089 A (DILLIPLANE et al) 17 August 1999, col. 7, line 51 to col. 8, line 13.	12
X	US 2004/0093208 A1 (YIN) 13 May 2004, fig. 3, para. 0015, 0056-0071.	23
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Y		



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"E" earlier application or patent published on or after the international filing date

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"O" document referring to an oral disclosure, use, exhibition or other means

"&"

document member of the same patent family

"P" document published prior to the international filing date but later than the priority date claimed

Date of the actual completion of the international search

Date of mailing of the international search report

18 January 2005 (18.01.2005)

28 FEB 2005

Name and mailing address of the ISA/US

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Form PCT/ISA/210 (second sheet) (January 2004)

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INTERNATIONAL SEARCH REPORTInternational application No.
PCT/US04/32296**C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2002/0118845 A1 (HENN et al) 29 August 2002, fig. 7, para. 0031-0033.	27

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Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
Please See Continuation Sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐
☐

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

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BOX III. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

1. This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group 1, claims 1-3 pertain to a real-time video decoder for a mobile device, classified in class 375/240.25.

Group 2, claim 4 pertains to a method of synchronization of audio and video data, classified in class 375/240.28; 348/515.

Group 3, claims 5-11 pertain to methods of reducing complexities of MPEG4 decoding, classified in class 375/240.27, 240.29.

Group 4, claims 12-16 pertain to a method of fast YUV to "RGB555" conversion, classified in class 348/453.

Group 5, claims 17-18 pertain to a method of compression B-frames, classified in class 375/240.15.

Group 6, claims 19-22 pertain to a method of fast fixed point implementation of an MPEG-1 Layer 3 decoding, classified in class 704/500.

Group 7, claims 23-26 pertain to a method for computational speedup of inverse modified discrete cosine transform, classified in class 375/240.2.

Group 8, claim 27 pertains to a method for computational speedup of final windowing in audio/visual (AV) decoder, classified in class 348/596.

Group 9, claims 28-31 pertain to a multimedia file format for compression/decompression facility classified in class 348/729.

Group 10, claims 32-33 pertain to a multimedia encryption method, classified in class 380/239.